

Task Analysis Data Processing and Enhanced Representations (TAPER), Phase I

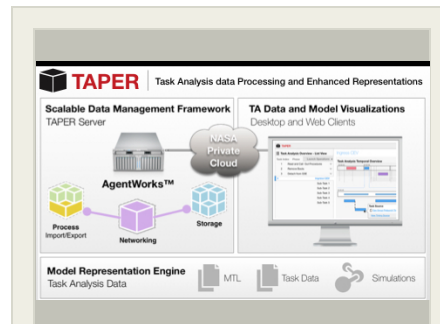
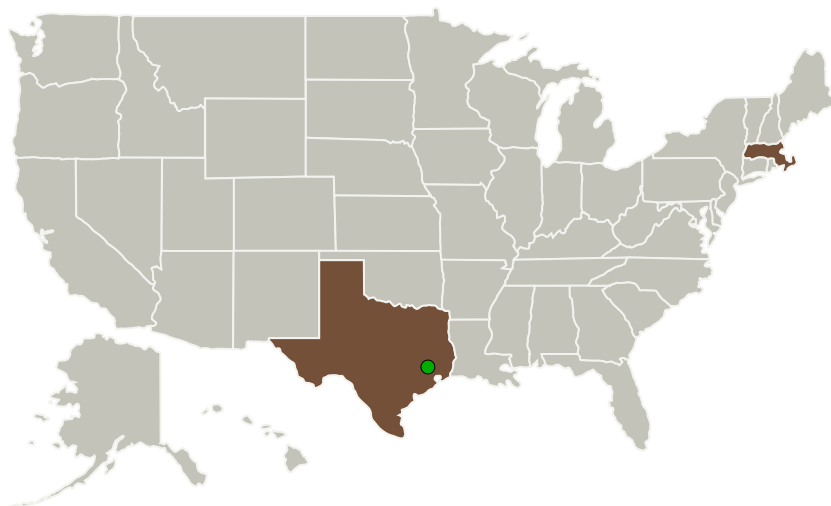
Completed Technology Project (2016 - 2016)



Project Introduction

Task Analysis (TA) is a fundamental part of NASA system design and validation. TAs are used to produce Master Task Lists that support engineering teams and operations specialists during development and validation of system design and procedures. However, current tools make it difficult to share TA insights between collaborators and do not adequately manage, maintain, and visualize complex TA data sets, making it challenging to integrate new data to support an iterative design and procedure development process. Improved TA tools that can better manage and visualize TA results have the potential to mitigate these shortcomings. Charles River Analytics proposes to design and demonstrate a system for Task Analysis Data Processing and Enhanced Representations (TAPER). TAPER will: (1) manage TA data through a modern web service-based data management framework that enables scalable storage, querying, and access to TA data between teams; (2) enable import and export of TA data that supports multiple forms of model development, including cognitive simulation, through a model representation engine; and (3) provide visualizations of TA data models tailored to the unique information needs of different users. Meeting these requirements will dramatically improve TA-supported collaborative design and development in large-scale engineering efforts.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Charles River Analytics Inc.	Lead Organization	Industry	Cambridge, Massachusetts
● Johnson Space Center(JSC)	Supporting Organization	NASA Center	Houston, Texas

Primary U.S. Work Locations	
Massachusetts	Texas

Project Transitions

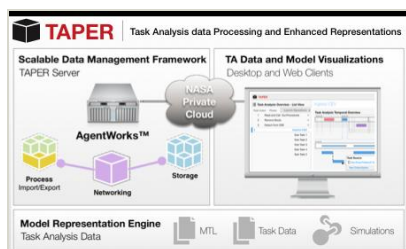
▶ **June 2016:** Project Start

✓ **December 2016:** Closed out

Closeout Documentation:

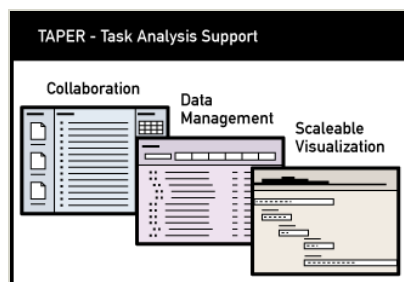
- Final Summary Chart(<https://techport.nasa.gov/file/139496>)

Images



Briefing Chart Image

Task Analysis data Processing and Enhanced Representations (TAPER), Phase I
(<https://techport.nasa.gov/image/131396>)



Final Summary Chart Image

Task Analysis data Processing and Enhanced Representations (TAPER), Phase I Project Image
(<https://techport.nasa.gov/image/130688>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Charles River Analytics Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

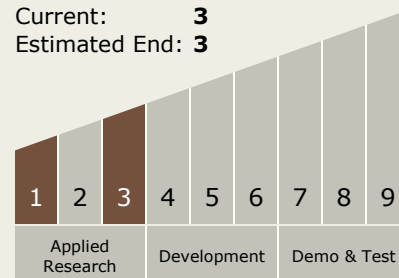
Carlos Torrez

Principal Investigator:

James Tittle

Technology Maturity (TRL)

Start: 1
Current: 3
Estimated End: 3



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Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.6 Human Systems Integration
 - └ TX06.6.1 Human Factors Engineering

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System